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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,925	10/19/2001	Syuuji Matsuura	0033-0772P	6304
2292	7590	07/12/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			KIM, KEVIN	
			ART UNIT	PAPER NUMBER
			2638	
DATE MAILED: 07/12/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/981,925

Applicant(s)

MATSUURA, SYUUJI

Examiner

Kevin Y. Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Birleson (US 6,714,776 previously cited) in view of Ohtsubo (US 4,939,780).

Birleson describes a modem tuner turner, see Fig. 1, for demodulating signals from a cable system, see col. 2, lines 32-33, comprising;

“a tuner portion” (156) for receiving input signals (from the front end) and amplifying “a signal corresponding to a reception channel” (the output from the bandpass filter 112),  
“a surface acoustic wave filter” (116) connected to an output of the tuner portion,  
“a gain control and intermediate frequency amplifying circuit” (120) connected to an output of the surface acoustic wave filter,  
“a lowpass filter” (130) connected to an output of the gain control and intermediate frequency amplifying circuit, (note that a low pass filter is used as a bandpass filter), and  
“an output circuit” (136) connected to an output of the low pass filter.

The claimed invention further defines that the output circuit is “for outputting balanced signals.” Ohtsubo et al teaches a cable converter including a saw filter outputting balanced signals, which provides better noise immunity. Thus, it would have been obvious to one skilled in the art at the time the invention was made to provide unbalance to balanced signal conversion to the cable tuner such as described by Brilesen to increase signal quality. Since the saw filter

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would produce balanced signals, the output circuit coupled to the low pass filter would also output balanced signals.

3. Claim 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Birleson (US 6,714,776) in view of Ohtsubo (US 4,939,780) as applied to claim 1 and claim 5 respectively, and further in view of Green Jr. (US 5,608,724).

Birleson in view of Ohtsubo disclose all the subject matter claimed except for a differential amplifier as the output circuit for producing balanced signals. Green Jr. teaches a differential amplifier for producing balanced signals. Thus, it would have been obvious to one skilled in the art at the time the invention was made to use a differential amplifier for producing balanced signals as taught by Green, Jr.

4. Claim 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Birleson in view of Ohtsubo (US 4,939,780) as applied to claim 1 above and further in view of Numanami et al (US 6,433,639 previously cited).

Consider claim 4. Birleson describes all the subject matter claimed, as explained above, but fails to specify the exact circuit requirements for the "gain control and intermediate frequency amplifying circuit" as opposed to "a dual type MOSFET amplifying circuit" required in the claim. Numanami et al teaches a high frequency amplifier that includes a dual type MOSFET (7), see Fig. 1, which provides amplification with reduced distortion, see col. 7, lines 19-35. Thus, it would have been obvious to one skilled in the art at the time the invention was made to include a dual type MOSFET as an amplifying element of the gain control and

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intermediate frequency amplifying circuit (120) of Birleson for the purpose of reducing distortion as taught by Numanami et al.

Claim 5.

Since the “gain control and intermediate frequency amplifying circuit” of Birleson would receive balanced signals, a balanced type dual gate MOSFET amplifying circuit would have been used.

***Allowable Subject Matter***

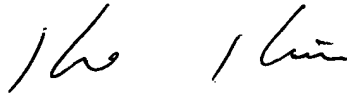
5. Claims 2,3,5,6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Venderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Kevin Kim', is positioned above the printed name.

**KEVIN KIM  
PATENT EXAMINER**